percent is withdrawn for irrigation. The geography and climate of the state are the dominant factors controlling California's water development. The principal centers of population and agriculture are mostly in water-deficient areas. Many of the valleys and plains of these areas are underlain by productive aquifers. The eventual realization that these underground aquifers were not unlimited was an important factor in the decisions that led to the large-scale importation from water-abundant areas of the north to water-deficient areas of the south.

Rainfall is extremely variable in California, with mean annual precipitation ranging from more than 40 inches in the mountainous areas of central and northern California to less than 5 inches in the desert areas. Natural recharge of ground water, from precipitation and stream infiltration, averages about 5.2 billion gallons per day statewide. Ground water is also recharged by an estimated 6.6 billion gallons per day of applied irrigation water, which percolates through the root zone to the water table.

California is one of the most physiographically and geologically diverse states in the United States. The mountains are formed of consolidated sedimentary, metamorphic, and igneous rocks. Geologic structures are complex, with abundant folds and faults, many of which are active. Earthquakes are common, particularly in the Coast Ranges. The valleys of California are filled with alluvium and other sedimentary materials that comprise most of the principal aquifers. About 40 percent of the land in California is underlain by aquifers. These aquifers are composed of alluvium and older sediments, mostly of continental origin, and volcanic rock. The sedimentary aquifers underlie the major valleys, coastal plains, and desert basins. Alluvial and other sedimentary aquifers in the state are divided into four geographic areas: coastal basins, Central Valley, Southern California, and desert areas. The statewide ground water basin identification report published in 1975 by the Department of Water Resources identified 248 ground water basins. Most of these basins have a rather complex hydrogeological structure with a mixture of confined and unconfined aquifers. A summary of aquifer well characteristics is given in Table 3.2.

Ground Water Quality Issues

Major sources of ground water pollution in California are from agricultural activity such as pesticides and fertilizers, hazardous waste sites, and leaking underground storage tanks and pipelines. Other sources of ground water pollution are municipal landfills, surface impoundments, salt water intrusion, open dumps, and disposal of waste waters, spills, accidents, industrial sites, and military installations.

Major ground water issues include ground water overdraft, salt water